भारतीय मानक

IS 7896 : 2023

Indian Standard

भारतीय शहरों के लिए वातानुकूलन बाह्य डिजाइन अवस्था डाटा

(दूसरा पुनरीक्षण)

Air Conditioning Outdoor Design Conditions Data for Indian Cities

(Second Revision)

ICS 23.120; 27.080

भारतीय मानक ब्यूरो

BUREAU OF INDIAN STANDARDS

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October 2023 **Price Group 6**

Refrigeration and Air Conditioning Sectional Committee, MED 03

FOREWORD

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Refrigeration and Air Conditioning Sectional Committee had been approved by the Mechanical Engineering Division Council.

This standard was first published in 1975 and subsequently revised in 2001. The following major modifications have been incorporated in this revision of the standard:

a) The title of the standard has been revised; and
b) The outdoor design conditions have been increased from 58 to 145 cities.

In the year 2001, through the support from the Ministry of Non-Conventional Energy Sources (MNES) renamed as Ministry of New and Renewable Energy (MNRE) in 2006, The Indian Society of Heating, Refrigerating and Air Conditioning Engineers (ISHRAE), and Tata Energy Research Institute (TERI), the standard was revised to cover 58 cities and weather data of summer, winter, and monsoon, in place of only three summer months were used.

Over the past few decades, since a large number of smaller cities have grown and many others are in the process of growing into larger cities together with significant development taking place under the Smart City Mission of the Government of India, ISHRAE took up a project to expand the list of cities from 58 to 145, to cover the country better through this standard. Weather data of recent past years has been used to identify the design conditions presented in this standard so that with the impact of urbanization, climate change also gets covered in the new design conditions.

With the major spurt in the construction of multistoried buildings in the metropolitan cities, the installations of central air conditioning systems have become an absolute necessity. The outdoor design conditions which form the basis of calculating the capacity of the plant that will be necessary for a building in a particular location in the country, becomes an effective tool for the guidance of the air conditioning industry. The representative weather data for each city has been arrived at by considering the combination of field measurements of temperature, humidity, precipitation and solar radiation and satellite data available from various sources.

The wide divergence of climatic conditions in the different parts of the country indicates that the same conditions may not be suitable for the design of air conditioning installations in different cities. The necessity, therefore, of laying down the realistic design conditions to suit the different locations has been realized.

The composition of the Committee responsible for the formulation of this standard is given in Annex A.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis shall be rounded off in accordance with IS 2 : 2022 ‘Rules for rounding off numerical values (*second revision*)’. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

AIR CONDITIONING OUTDOOR DESIGN CONDITIONS DATA FOR INDIAN CITIES

(Second Revision)

1 SCOPE

This standard specifies the outdoor (temperature and humidity) design conditions for air conditioning and heating or internationally accepted format, explained hereunder:

a) Dry bulb (DB) temperature corresponding to 0.4 percent, 1 percent, and 2 percent annual cumulative frequency of occurrence and the mean coincidental wet bulb temperature (MCWB) (Summer - Cooling DB/MCWB);

b) Wet bulb (WB) temperature corresponding to 0.4 percent, 1 percent, and 2 percent annual cumulative frequency of occurrence and the mean coincidental dry bulb temperature (Monsoon - Cooling WB/MCDB); and

c) Dry bulb (DB) temperature corresponding to 99.6 percent and 99 percent annual cumulative frequency of occurrence and the mean coincidental wet bulb temperature (Winter - Heating DB/ MCWB).

2 REFERENCES

The standard given below contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent edition of this standard:

IS No.	*Title*
IS 3615 : 2020	Glossary of terms used in refrigeration and air conditioning (*second revision*)

3 TERMINOLOGY

For the purpose of this standard, the definitions given in IS 3615 shall apply, in addition to the following.

3.1 Dry Bulb Temperature (DBT) — It is the temperature of air measured by a thermometer freely exposed to the air, but shielded from radiation and moisture.

3.2 Wet Bulb Temperature (WBT) — The temperature indicated when a thermometer bulb is covered with a water saturated wick over which air is caused to flow at approximately 4.5 m/s (900 ft/min) to reach the equilibrium temperature of water evaporating into the air when the heat of vaporization is supplied by the sensible heat of the air.

NOTE — 1 ft/min = 0.005 08 m/s.

4 OUTDOOR DESIGN CONDITIONS

4.1 The outdoor design conditions for 145 cities are given in Table 1.

4.2 Basis of Arriving at Outdoor Design Conditions

4.2.1 The cumulative frequency distribution curves for dry bulb temperature and wet bulb temperature were obtained using the entire sequence of these parameters for all the available years for each city, after calculating the frequencies of temperature and bin size of 0.1 °C. The design temperatures have been derived directly from the cumulative frequency curves.

4.2.2 Values of ambient dry bulb and wet bulb temperatures to the various annual percentiles represent the value that is exceeded on average by the indicated percentage of the total number of hours. The 0.4 percent, 1 percent and 2 percent values are exceeded on average 35 h, 88 h and 175 h in a year. The 99 percent and 99.6 percent values are defined in the same way but are usually viewed as the values for which the corresponding weather elements are less than the design conditions 35 h and 88 h, respectively.

4.2.3 Mean coincidental values are the average of the indicated weather element occurring concurrently with the corresponding design value.

4.2.4 After the calculation of the design dry bulb temperatures, the corresponding wet bulb temperature from the database for the particular station was computed by calculating the average of these values which was then called the mean of coincidental wet bulb temperature (MCWB).

4.2.5 In the same way, design wet bulb temperatures and coincidental dry bulb temperature were calculated.

Table 1 Data for Outdoor Design Conditions for Indian Cities

(*Clause* 4.1)

Sl No.	City	Heating DB		Cooling DB/MCWB						Evaporation WB/MCDB					
		99.6 %	99 %	0.4 %		1 %		2 %		0.4 %		1 %		2 %	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
i)	Agartala	10.8	11.6	35.2	25	34.5	25	33.8	27	28.5	33	28.1	32	27.8	32
ii)	Agra	4.6	6.1	42.1	21	40.8	22	39.8	22	28.7	31	28.3	30	28	31
iii)	Ahmedabad	12.3	13.2	42.7	25	41.7	22	41	22	30.2	35	29.3	34	28.4	33
iv)	Aizawl	10.5	11.3	30.5	20	29.5	21	28.9	21	24.8	27	24.5	26	24.1	27
v)	Ajmer	4.8	5.6	41.5	22	40.7	21	39.4	21	25.2	34	24.9	34	24.7	33
vi)	Akola	12.4	13.9	43.1	23	42.2	21	41.4	22	26.9	33	26.5	32	26.2	31
vii)	Aligarh	3.9	5.3	42.9	23	41.8	23	40.4	24	28.3	33	27.9	34	27.6	33
viii)	Allahabad	9.8	10.6	43.1	23	41.7	23	40.3	23	28.7	32	28.3	33	28	32
ix)	Amaravati	19.2	19.8	42	27	39.7	27	38.1	26	28.4	33	28.2	32	27.8	33
x)	Amritsar	3	4.5	42	23	41	23	39	23	29.2	32	28.6	32	28.2	31
xi)	Anantapur	16.9	18.1	40	24	39.5	24	38.7	23	26.3	35	25.8	33	25.5	34
xii)	Aurangabad	11.8	12.9	40.1	23	39.3	22	38.3	22	26.8	34	26	32	25.5	31
xiii)	Balasore	12.9	13.9	36.8	26	35.5	26	34.6	27	28.8	33	28.4	33	28.1	33
xiv)	Bareilly	6.4	7.2	39.6	23	38.7	26	37.7	25	29.2	34	28.8	33	28.4	33
xv)	Barmer	10.6	11.5	43.2	23	42	22	40.4	24	28.3	36	27.9	35	27.5	34
xvi)	Belgaum	13.5	14.6	36.7	19	35.5	18	34.2	19	24.1	29	23.7	29	23.4	28
xvii)	Bengaluru	15.6	16.2	34.1	21	33.4	20	32.7	19	23.5	29	23.1	29	22.8	28
xviii)	Bhagalpur	13.1	13.8	38.3	22	36.8	25	35	27	29.3	34	28.9	33	28.7	32
xix)	Bhavnagar	12	12.8	42.4	25	41.3	27	39.8	25	28.4	30	28.1	32	27.8	32
xx)	Bhilai	12.7	14	42.6	23	41.7	24	40.4	23	26.8	31	26.5	32	26.2	31
xxi)	Bhopal	9	10.2	42	21	40.7	25	39.5	21	26	30	25.7	30	25.3	29
xxii)	Bhubaneswar	14.1	15.1	38.9	27	37.8	27	36.7	26	30.1	35	29.5	33	29.1	33
xxiii)	Bhuj	12.4	13.3	40.5	23	39.5	24	38.3	23	28.1	36	27.6	33	27.3	33
xxiv)	Biharsharif	7.8	8.7	40.1	24	38.7	24	37.6	24	28.4	31	28	32	27.7	31
xxv)	Bikaner	7.6	9.1	44.8	22	43.3	23	41.9	23	27.6	34	27.2	32	26.8	33
xxvi)	Bilaspur	11.8	13	43.2	22	42.3	23	41.3	23	26.9	31	26.6	31	26.4	31
xxvii)	Chandigarh	2.8	4	43	22	40.8	20	39.2	18	27.2	33	26.8	32	26.5	32
xxviii)	Chennai	20.5	21	39	26	38	26	37	26	28.5	34	28.1	34	27.8	35
xxix)	Chitradurga	16.2	16.9	37.4	21	36.5	21	35.6	20	23.8	27	23.5	26	23.2	26
xxx)	Coimbatore	18.6	19.5	36.5	23	35.8	24	34.9	24	25.4	33	25.1	31	24.9	29

Table 1 (*Continued*)

Sl No.	City	Heating DB		Cooling DB/MCWB						Evaporation WB/MCDB					
		99.6 %	99 %	0.4 %		1 %		2 %		0.4 %		1 %		2 %	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
xxxi)	Cuddalore	20.1	20.8	37.9	26	37.1	26	36.1	27	29	33	28.7	33	28.3	34
xxxii)	Dahod	8.6	9.8	41.1	20	40.4	23	39.3	21	27	30	26.5	32	25.7	33
xxxiii)	Daltonganj	8.8	9.9	43.3	24	42	25	41	24	28.1	32	27.7	31	27.5	32
xxxiv)	Davanagere	16.9	17.7	37.4	21	36.5	21	35.7	21	24.2	29	23.8	29	23.5	29
xxxv)	Dehradun	5.8	6.6	37.7	22	36.2	23	34.5	22	27	30	26.5	30	26.2	30
xxxvi)	Dhanbad	8	9.3	41.5	23	40.5	22	39.7	22	27.4	32	27	32	26.7	31
xxxvii)	Dharmsala	3.7	4.7	32.1	20	31.1	21	30.2	18	23.7	28	23.4	26	22.9	25
xxxviii)	Dibrugarh	10.2	11	35	28	34	27	33.2	27	29.2	34	28.6	33	28.1	32
xxxix)	Diu	10.5	11.4	35.9	24	34.6	23	33.6	22	25.1	30	24.8	29	24.6	29
xl)	Erode	18.3	18.9	40.3	23	39.3	23	38.3	24	26.5	31	25.8	30	25.4	31
xli)	Etawah	3.8	5.3	44.2	24	43.1	25	42	25	28.9	36	28.2	37	27.6	34
xlii)	Ganganagar	4.6	6.1	44.2	22	42.7	26	40.8	25	29.1	35	28.7	34	28.4	35
xliii)	Gangtok	1.4	2.3	23.1	19	22.7	18	22.3	19	19.8	22	19.6	22	19.4	22
xliv)	Gaya	7	9	43.3	20	41.8	23	40.2	21	28.5	33	28	33	27.7	32
xlv)	Gorakhpur	8.5	9.6	40.7	23	38.9	23	37.7	22	28.1	32	27.8	33	27.5	33
xlvi)	Gulbarga	19.4	20.4	41.5	24	40.6	25	39.8	25	27.4	36	27	34	26.6	35
xlvii)	Guna	8.5	10	42.8	22	41.9	22	40.9	22	27	33	26.7	31	26.4	32
xlviii)	Guntur	16.6	17.7	41.1	25	39.6	25	38.5	25	28.6	31	28.3	31	28.1	31
xlix)	Guwahati	11.2	12.1	35.4	27	34.5	29	33.9	27	29.2	34	28.9	33	28.6	33
l)	Gwalior	4.9	5.7	43.2	24	42.2	24	40.9	23	28.5	34	28.2	35	27.8	33
li)	Hissar	4.1	5.1	43.8	25	42.6	24	41.2	23	29	37	28.7	34	28.3	33
lii)	Honnavar	18.8	19.8	34.3	24	33.6	24	33.1	25	27.8	32	27.4	32	27.2	31
liii)	Hubballi	12.5	13.2	41.8	24	40.7	23	39.4	24	26	26	25.5	29	25.2	30
liv)	Hyderabad	15.3	16.3	41	22	39.6	22	38.4	24	25.4	34	25	31	24.7	31
lv)	Imphal	4.9	5.9	32	21	31.3	23	30.7	23	25.7	31	25.2	30	24.8	29
lvi)	Indore	10.4	11.3	39.9	19	38.9	21	37.9	21	25.6	31	25.1	29	24.8	29
lvii)	Itanagar	8.8	9.7	35.2	29	34.3	29	33.4	29	29.8	34	29.5	34	29.1	32
lviii)	Jabalpur	8.4	9.8	41.6	20	40.7	20	39.5	20	26.3	30	25.9	31	25.6	30
lix)	Jagdalpur	9.6	11.1	39.2	20	38.1	23	37	23	26.6	36	25.9	32	25.5	31
lx)	Jaipur	8.4	9.3	42.4	20	41	21	40	21	27.6	33	27.2	31	26.9	32
lxi)	Jaisalmer	8.3	9.3	44.3	24	42.8	23	41.7	25	28.1	38	27.6	34	27.2	36
lxii)	Jalandhar	4.3	5.5	43.7	21	42.4	21	40.7	21	25.6	33	25	36	24.6	33

Table 1 (*Continued*)

Sl No.	City	Heating DB		Cooling DB/MCWB						Evaporation WB/MCDB					
		99.6 %	99 %	0.4 %		1 %		2 %		0.4 %		1 %		2 %	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
lxiii)	Jammu	4.8	5.8	41.9	21	40.1	20	38.9	21	28.6	32	27.9	30	27.4	32
lxiv)	Jamnagar	7.9	8.9	38.7	24	37.5	23	36.5	24	27.7	30	27.5	31	27.3	32
lxv)	Jamshedpur	9.8	10.7	41.4	23	39.8	23	38.2	24	27.6	33	27.3	33	27	32
lxvi)	Jhansi	6.1	7	44.9	24	43.7	22	42.8	22	27.6	34	27.1	31	26.9	33
lxvii)	Jharsuguda	11	12	42	24	40.8	24	39.5	23	27.8	31	27.4	32	27.1	31
lxviii)	Jodhpur	9	10.4	42.1	22	40.7	23	39.8	23	27.9	33	27.4	34	27	32
lxix)	Jorhat	8.5	9.2	33.1	27	32.6	26	31.6	27	27.7	31	27.5	30	27.2	30
lxx)	Kakinada	18.1	19.4	42.2	26	39.4	25	37.3	28	29.2	35	28.8	33	28.4	34
lxxi)	Kalingapatnam	15.8	17.6	35.3	29	34.6	29	34	28	29.7	34	29.5	33	29.1	33
lxxii)	Kannur	20.6	21.2	36.4	24	35.6	24	34.9	24	26.8	30	26.5	31	26.3	30
lxxiii)	Kanpur	6.4	7.2	43.4	23	42	23	40.9	23	28.5	34	28.2	34	28	33
lxxiv)	Karaikal	21.8	22.7	37	26	36.2	26	35.3	26	29.1	34	28.9	34	28.4	32
lxxv)	Karimnagar	13.4	14.7	42.7	24	41.9	26	40.7	25	28.2	37	27.6	34	27.2	35
lxxvi)	Karnal	4.7	5.6	40.8	22	39.7	24	38.4	22	27.8	33	27.3	31	26.9	32
lxxvii)	Karwar	20.6	21.6	35.9	27	35.4	26	34.9	26	29.6	34	29.2	34	28.8	33
lxxviii)	Kavaratti	23.3	24	33.8	28	33.4	27	32.9	27	28.6	33	28.2	33	27.9	32
lxxix)	Kochi	22.8	23.2	32.9	26	32.6	26	32.3	26	27.6	32	27.3	31	27.1	31
lxxx)	Kodaikanal	7	7.7	24.4	15	23.4	14	22.6	14	15.8	22	15.4	22	15.1	21
lxxxi)	Kohima	5.9	6.8	27.1	20	26.3	21	25.6	20	21.6	23	21.3	24	21.1	24
lxxxii)	Kolhapur	19.4	20.3	35.6	20	35.1	20	34.5	20	27.4	28	26.6	27	25.5	29
lxxxiii)	Kolkata	12	13	37	28	36.3	28	35.7	28	29.6	33	29.2	34	28.8	34
lxxxiv)	Kollam	21.8	22.3	34.2	25	33	23	32.4	23	26.8	30	26.6	30	26.4	29
lxxxv)	Kota	10	11.2	43.5	21	42.3	21	41	22	27.1	32	26.8	31	26.5	31
lxxxvi)	Kozhikode	22.6	23.1	34.8	29	34.3	28	33.9	27	29.2	34	28.9	33	28.6	33
lxxxvii)	Kurnool	17.1	18	41.1	22	40.1	24	39.2	24	26.1	32	25.8	34	25.5	33
lxxxviii)	Leh	-20.7	-19	26.6	10	25.8	11	24.8	11	14	23	13.5	21	12.9	20
lxxxix)	Lucknow	6.7	8	42	23	41	23	40	24	29.4	34	29	36	28.6	34
xc)	Ludhiana	2.6	3.6	40.7	22	39.3	24	38.1	22	28.1	30	27.6	32	27.2	32
xci)	Machilipatnam	20.4	20.9	40.3	28	38.7	27	37.1	27	29.7	36	29.3	36	28.8	34
xcii)	Madurai	18.1	18.8	40.9	24	39.6	25	38.8	25	28.1	32	27.4	32	27	32
xciii)	Mangaluru	21.3	22	34.2	24	33.7	25	33.3	25	27	33	26.7	31	26.5	30
xciv)	Minicoy	23.9	24.4	33.3	28	32.9	28	32.5	28	28.7	32	28.3	32	28.1	32

Table 1 (*Continued*)

Sl No.	City	Heating DB		Cooling DB/MCWB						Evaporation WB/MCDB					
		99.6 %	99 %	0.4 %		1 %		2 %		0.4 %		1 %		2 %	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
xcv)	Moradabad	5.2	6.6	42.1	23	40.7	24	39.4	25	28.8	35	28.3	33	27.8	33
xcvi)	Mumbai	19	20.2	35	23	34.7	24	33.9	23	27.9	31	27.7	31	27.3	31
xcvii)	Muzaffarpur	8.5	9.3	38.9	25	37.9	26	36.8	27	29.5	35	29.2	34	28.9	32
xcviii)	Mysuru	14.6	15.1	36.7	21	35.5	22	34.4	22	24	25	23.6	29	23.2	27
xcix)	Nagappattinam	22.7	23.2	36.9	26	36.2	26	35.4	27	29.1	32	28.9	32	28.6	32
c)	Nagpur	12	13	44	22	43	22	42	22	27.5	31	27.1	29	26.7	31
ci)	Nashik	9.2	10.3	38.2	19	37.1	19	36.2	20	24.9	30	24.6	29	24.2	29
cii)	Nellore	21	21.6	41	28	39.6	27	38.4	28	28.8	36	28.5	38	28.2	35
ciii)	New-Delhi	5	6.5	43.6	21	42.6	22	41	23	28.2	36	27.8	35	27.5	30
civ)	Nizamabad	15.4	16.6	43.3	24	41.9	24	40.3	23	26.2	30	25.9	30	25.6	31
cv)	Ongole	21.5	21.8	41.9	27	39.2	26	37.7	27	28.7	36	28.3	36	27.8	34
cvi)	Panaji	19.8	20.5	34.1	26	33.8	27	33.3	26	28.2	33	27.9	32	27.6	32
cvii)	Pasighat	11	11.9	34.1	26	33.3	27	32.4	26	27.7	32	27.3	31	27	31
cviii)	Patiala	6.2	7	42.2	26	40.4	24	38.8	25	29.4	34	29	34	28.6	33
cix)	Patna	7	8.2	41	24	39.6	26	37.7	23	28.6	33	28.3	33	28	32
cx)	Pendra-Road	9	10.2	39.7	21	38.7	21	37.6	23	26.2	31	25.7	30	25.3	29
cxi)	Port-Blair	22.1	22.9	33.1	27	32	27	31.3	26	27.5	32	27.2	31	26.9	30
cxii)	Pune	10.2	11.2	38.7	19	37.5	20	36.3	19	24.6	30	24	30	23.8	29
cxiii)	Raipur	13.1	14.2	42.1	24	41.1	23	40	24	27.1	31	26.8	32	26.5	31
cxiv)	Rajkot	12	13	41.3	21	39.9	23	38.9	24	27.4	29	27	30	26.7	31
cxv)	Ranchi	8.9	10	38.9	20	37.7	20	36.3	20	25.9	30	25.4	29	25.2	29
cxvi)	Ratnagiri	17.9	18.6	34.1	22	33.7	24	33.1	23	27.1	31	26.9	30	26.7	30
cxvii)	Raxaul	8.3	9.3	38.6	25	36.3	26	34.8	25	29	32	28.6	32	28.3	32
cxviii)	Roorkee	4.4	5.3	40.4	24	39.1	23	37.9	23	27.9	32	27.4	31	27.2	32
cxix)	Sagar	8.1	9.5	41.9	24	41.1	23	40	21	26.5	37	25.9	33	25.5	30
cxx)	Saharanpur	4.2	4.9	43.2	22	42	23	40.7	24	28.5	33	28.2	33	27.9	34
cxxi)	Salem	17.5	18.2	39.9	24	39.1	22	38.1	23	25.6	30	25.2	31	25	30
cxxii)	Sangli	7.8	8.5	40.1	20	38.9	19	37.8	18	24.5	27	24.2	27	23.9	28
cxxiii)	Satna	7.6	8.6	43.4	23	42.2	22	40.5	23	27.5	33	27	31	26.7	30
cxxiv)	Shillong	3.3	4.3	26.1	21	25.5	21	24.9	20	21.5	24	21.1	24	20.9	24
cxxv)	Shivamogga	13.7	14.7	39	21	38	20	36.9	20	24	29	23.8	29	23.6	28
cxxvi)	Siliguri	8.6	9.6	36.3	30	35	28	33.9	28	30.8	32	30	31	29.1	32

Table 1 (*Concluded*)

Sl No.	City	Heating DB		Cooling DB/MCWB						Evaporation WB/MCDB					
		99.6 %	99 %	0.4 %		1 %		2 %		0.4 %		1 %		2 %	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
cxxvii)	Silvassa	9	10.6	36.8	22	35.4	18	34.6	20	25.7	29	25.4	29	25	28
cxxviii)	Solapur	15.2	16.4	40.7	21	39.9	22	39.1	21	26.1	34	25.5	34	25.1	34
cxxix)	Srinagar	-3.7	-2.4	31	20	29.9	20	28.9	20	22.4	30	21.9	28	21.3	26
cxxx)	Surat	13.3	14.7	37.5	22	36.1	23	35.1	24	28.4	31	28.1	31	27.8	30
cxxxi)	Tezpur	11.2	12.1	34.5	29	33.8	26	33.1	27	29	32	28.6	32	28.2	32
cxxxii)	Thanjavur	18.8	19.8	41.5	26	40.5	25	39.3	25	27.4	35	27.1	32	26.9	31
cxxxiii)	Thiruvananthapuram	22.5	23	34.3	26	33.6	25	33.1	26	27.8	32	27.4	31	27.2	32
cxxxiv)	Thoothukudi	20.2	21	39.2	25	38.4	25	37.6	26	27.8	32	27.5	31	27.2	31
cxxxv)	Thrissur	19.3	20.3	37.8	26	36.1	27	34.8	25	28.8	31	28.6	32	28.2	31
cxxxvi)	Tiruchrapalli	20	20.7	39	26	38.4	26	37.8	26	27.1	35	26.8	34	26.5	34
cxxxvii)	Tirunelveli	20.3	21	41.8	24	40.3	25	39.1	24	26.5	30	26.2	30	26	31
cxxxviii)	Tiruppur	16.4	17	31.9	20	30.8	20	29.9	18	21.9	25	21.6	24	21.4	24
cxxxix)	Tumakuru	14.7	15.5	37.8	19	36.4	20	35.2	18	22.3	30	21.9	30	21.5	28
cxl)	Udaipur	6.5	8.4	40.7	22	39.9	20	38.6	21	26.2	31	25.9	30	25.6	31
cxli)	Varanasi	8	9.9	43	24	42	24	41	24	28.7	35	28.4	33	27.9	33
cxlii)	Vellore	15.9	16.7	42.1	23	40.3	23	38.8	22	25.6	29	25.3	31	25.1	30
cxliii)	Veraval	15.5	16.5	35.2	22	34	26	33.2	28	28.8	33	28.5	32	28.3	32
cxliv)	Vishakhapatnam	20	21.2	34	27	33.4	27	33	28	29.3	32	28.8	32	28.4	32
cxlv)	Warangal	13.8	14.6	43.9	23	42.9	23	41.6	23	27.5	32	27.2	32	26.9	31

NOTES

1 In case monthly mean, maximum, and range of dry bulb temperatures for these stations are required, the booklet titled ‘Weather Data and Design Conditions for India’ by ISHRAE may be referred.

2 Selection of values from a particular column depends upon the type of application. Heating, ventilation, and air conditioning (HVAC) system designer may accordingly use the values given above.

ANNEX A

(*Foreword*)

COMMITTEE COMPOSITION

Refrigeration and Air Conditioning Sectional Committee, MED 03

Organization	*Representative(s)*
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